



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0284; Project Identifier MCAI-2021-01369-A; Amendment 39-22062; AD 2022-11-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Viking Air Limited (Type Certificate Previously Held by Bombardier, Inc. and de Havilland, Inc.) Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Viking Air Limited (type certificate previously held by Bombardier Inc. and de Havilland, Inc.) Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes. This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as binding of the rod end bearing connecting the lower fuel control unit (FCU) push rod assembly to the FCU power lever. This AD requires performing tests, inspections, and lubrication of the FCU push rod assemblies, and replacing them with improved parts as necessary. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Viking Air Ltd., 1959 de Havilland Way, Sidney British Columbia, Canada V8L 5V5; phone: (800) 663-8444; email: [continuing.airworthiness@vikingair.com](mailto:continuing.airworthiness@vikingair.com); website: <https://www.vikingair.com>. You may view this service information at the FAA,

Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0284.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0284; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the MCAI, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Elizabeth Dowling, Aviation Safety Engineer, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (516) 228-7300; email: [elizabeth.m.dowling@faa.gov](mailto:elizabeth.m.dowling@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain serial-numbered Viking Air Limited Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes. The NPRM published in the *Federal Register* on March 22, 2022 (87 FR 16123). The NPRM was prompted by MCAI originated by Transport Canada, which is the aviation authority for Canada. Transport Canada has issued AD CF-2021-42, dated November 26, 2021 (referred to after this as “the MCAI”), to correct an unsafe condition on Viking Air Limited Model DHC-6 series 1, DHC-6 series 100, DHC-6 series 110, DHC-6 series 200, DHC-6 series 210, DHC-6 series 300, DHC-6 series 310, DHC-6 series 320, and DHC-6 series 400 airplanes with certain part-numbered FCU push rod assemblies installed. The MCAI states:

There have been in-service reports of binding of [part number] P/N VSC30-3A rod end bearings used in the

linkage for the lower FCU push rod assembly P/N C6CE1398-7. The lower FCU push rod assembly is connected to the FCU power lever and contains a rod end bearing at each end. P/N VSC30-3A rod end bearings, fabricated with a metal inner race and a dry film lubricant, have been incorporated on FCU push rod assemblies introduced through Viking Air Ltd (Viking) MOD 6/2347. P/N VSC30-3A rod end bearings may have also been installed in-service as a replacement part in lower FCU push rod assembly P/N C6CE1398-3. In one instance, binding of the lower FCU push rod bearing resulted in one engine failing to return to a lower power setting from a higher power setting when commanded, which subsequently resulted in the need to perform an in-flight engine shutdown during final approach. An investigation also revealed that binding of P/N VSC30-3A rod end bearings can occur after a period of non-utilization of the aeroplane.

This condition, if not detected and corrected, may lead to the inability to reduce power on the affected engine, resulting in the need to perform an in-flight engine shutdown, and consequently leading to reduced control of the aeroplane and increased pilot workload during this critical phase of flight.

To address this unsafe condition, this [Transport Canada] AD mandates initial and repetitive functional checks, special detailed inspection (SDI) and lubrication of the affected FCU push rod assembly, and its replacement, as required, with a redesigned FCU push rod assembly with improved reliability (MOD 6/2484), in accordance with Viking Service Bulletin (SB) V6/0063. This [Transport Canada] AD also prohibits the installation of an affected FCU push rod assembly as a replacement part on applicable aeroplanes.

You may examine the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0284.

In the NPRM, the FAA proposed to require performing tests, inspections, and lubrication of the FCU push rod assemblies, and replacing them with improved parts as necessary. The FAA is issuing this AD to address the unsafe condition on these products.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received one comment from the Air Line Pilots Association, International (ALPA). ALPA supported the NPRM without change.

## **Conclusion**

These products have been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI and service information referenced above. The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

## **Related Service Information under 1 CFR Part 51**

The FAA reviewed the following:

- Viking DHC-6 Twin Otter Service Bulletin (SB) No. V6/0063, Revision A, dated February 1, 2021, which specifies procedures for performing tests, inspections, and lubrication of the FCU push rod assemblies; and
- Viking DHC-6 Twin Otter Technical Bulletin No. V6/00155, Revision NC, dated September 14, 2020, which specifies procedures for replacing the FCU push rod assemblies with improved parts.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **Other Related Service Information**

The FAA also reviewed Viking DHC-6 Twin Otter SB No. V6/0063, Revision NC, dated June 7, 2019, which specifies procedures for performing tests, inspections, and lubrication of the FCU push rod assemblies. Viking revised this service information and issued Viking SB V6/0063, Revision A, to extend the lubrication requirement of Mod 6/2347 rod ends to all operating environments, add repeat inspections, and introduce a test and lubrication for airplanes that have not been in operation after a period of time before re-entry into service.

## **Differences Between This AD and the MCAI**

The MCAI applies to Viking Air Limited Model DHC-6 series 110, DHC-6 series 210, DHC-6 series 310, and DHC-6 series 320, and this AD would not because these

models do not have an FAA type certificate. Model DHC-6 series 1, DHC-6 series 100, DHC-6 series 200, DHC-6 series 300, and DHC-6 series 400 airplanes specified in the MCAI correspond to Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes specified in this AD, respectively.

The MCAI requires reporting information to the manufacturer, and this AD does not.

### **Costs of Compliance**

The FAA estimates that this AD affects 34 airplanes of U.S. registry. The FAA estimates the following costs to comply with this AD:

#### **Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per airplane</b>	<b>Cost on U.S. operators</b>
Test, inspect, and lubricate the FCU push rod assemblies	1 work-hour x \$85 per hour = \$85	Not Applicable	\$85 per inspection cycle	\$2,890 per inspection cycle

The FAA estimates the following costs to replace the FCU push rod assemblies. The agency has no way of determining the number of airplanes that might need these replacements:

#### **On-condition costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per airplane</b>
Replace both FCU push rod assemblies	3 work-hours x \$85 per hour = \$255	\$60	\$315

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by

prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-11-12 Viking Air Limited (Type Certificate Previously Held by Bombardier Inc. and de Havilland, Inc.):** Amendment 39-22062; Docket No. FAA-2022-0284; Project Identifier MCAI-2021-01369-A.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Viking Air Limited (Type Certificate Previously Held by Bombardier Inc. and de Havilland, Inc.) Model DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300, and DHC-6-400 airplanes, serial numbers 001 through 989, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7600, Engine Controls.

**(e) Unsafe Condition**

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI identifies the unsafe condition as binding of the rod end bearing connecting the lower fuel control unit (FCU) push rod assembly to the FCU power lever. The unsafe condition, if not addressed, could lead to the inability to reduce power on the affected engine, which could result in an in-flight engine shutdown and reduced airplane control.

**(f) Definitions**

(1) For purposes of this AD, an “affected FCU pushrod assembly” is one of the following:

- (i) Lower FCU push rod assembly part number (P/N) C6CE1398-7; or
- (ii) Lower FCU push rod assembly P/N C6CE1398-3 with P/N VSC30-3A rod end bearing installed.

Note 1 to paragraph (f)(1): P/N C6CE1398-7 may also be referred to as modification (MOD) 6/2347.

(2) For purposes of this AD, a “serviceable FCU push rod assembly” is lower FCU push rod assembly P/N C6CE1398-9.

Note 2 to paragraph (f)(2): P/N C6CE1398-9 may also be referred to as MOD 6/2484.

**(g) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(h) Required Actions**

(1) Within 125 hours time-in-service (TIS) after the effective date of this AD or within 30 days after the effective date of this AD, whichever occurs first, test each affected FCU push rod assembly for binding and restriction in accordance with the Accomplishment Instructions, paragraphs A.1. through A.3., in Viking DHC-6 Twin Otter Service Bulletin No. V6/0063, Revision A, dated February 1, 2021 (Viking SB V6/0063, Revision A).

(i) If there is any binding or restriction, before further flight, remove both affected FCU push rod assemblies from service and install serviceable FCU push rod assemblies in accordance with the Accomplishment Instructions, paragraph A.4., in Viking SB V6/0063, Revision A, and the Accomplishment Instructions, Sections A through C, in Viking DHC-6 Twin Otter Technical Bulletin No. V6/00155, Revision NC, dated September 14, 2020 (Viking TB V6/00155, Revision NC).

(ii) If there is no binding and no restriction, before further flight, remove each affected FCU push rod assembly, clean the push rod ends, and inspect each affected FCU push rod assembly for corrosion and condition of the lubricant. Pay particular attention to the bearing ball and race.

(A) If there is no corrosion and the lubricant color and texture is normal, before further flight, lubricate each affected FCU push rod assembly in accordance with the Accomplishment Instructions, Section C, in Viking SB V6/0063, Revision A.

(B) If there is corrosion or if the lubricant is abnormal in color (too dark) or texture (too sticky), before further flight, remove both affected FCU push rod assemblies from service and install serviceable FCU push rod assemblies in accordance with the Accomplishment Instructions, paragraph A.4, in Viking SB V6/0063, Revision A, and the Accomplishment Instructions, Sections A through C, in Viking TB V6/00155, Revision NC.

(2) Repeat the requirements of this AD as follows until both affected FCU push rod assemblies are replaced.



(i) Test and lubrication: At intervals not to exceed 125 hours TIS or before further flight anytime the airplane has not been operated for a period of 30 days, whichever occurs first.

(ii) Inspection: At intervals not to exceed 1,500 hours TIS.

(3) As of the effective date of this AD, do not install an affected FCU push rod assembly on any airplane.

**(i) Credit for Previous Actions**

You may take credit for the test, inspection, replacement, and lubrication required by paragraphs (h)(1) and (2) of this AD if you performed those actions before the effective date of this AD using Viking DHC-6 Twin Otter Service Bulletin No. V6/0063, Revision NC, dated June 7, 2019.

**(j) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (k)(1) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(k) Related Information**

(1) For more information about this AD, contact Elizabeth Dowling, Aviation Safety Engineer, New York ACO Branch, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; phone: (516) 228-7300; email: elizabeth.m.dowling@faa.gov.

(2) Refer to Transport Canada AD CF-2021-42, dated November 26, 2021, for more information. You may examine the Transport Canada AD in the AD docket at <https://www.regulations.gov> by searching for and locating it in Docket No. FAA-2022-0284.

(3) Service information identified in this AD that is not incorporated by reference

is available at the addresses specified in paragraphs (1)(3) and (4) of this AD.

**(I) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Viking DHC-6 Twin Otter Service Bulletin No. V6/0063, Revision A, dated February 1, 2021.

(ii) Viking DHC-6 Twin Otter Technical Bulletin No. V6/00155, Revision NC, dated September 14, 2020.

(3) For service information identified in this AD, contact Viking Air Ltd., 1959 de Havilland Way, Sidney British Columbia, Canada V8L 5V5; phone: (800) 663-8444; email: [continuing.airworthiness@vikingair.com](mailto:continuing.airworthiness@vikingair.com); website: <https://www.vikingair.com>.

(4) You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 24, 2022.

Gaetano A. Sciortino, Deputy Director for Strategic Initiatives,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.